

**REMARKS:**

Applicant has carefully studied the final Examiner's Action and all references cited therein. The amendment appearing above and these explanatory remarks are believed to be fully responsive to the Action. Accordingly, this important patent application is now believed to be in condition for allowance.

Applicant responds to the outstanding Action by centered headings that correspond to the centered headings employed by the Office, to ensure full response on the merits to each finding of the Office.

Claims 10, 41 and 42 have been canceled.

**Claim Rejections – 35 U.S.C. § 112**

Claims 4 and 6 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 4 and 6 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 6 have been amended to overcome the 35 U.S.C. § 112 rejections by the Office and are now believed to be in condition for allowance.

**Claim Rejections – 35 U.S.C. § 103**

Applicant acknowledges the quotation of 35 U.S.C § 103(a).

Claims 1, 2, 7-9, 11-15, 40 and 41 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Momyer (US 4,001,043) in view of Narang (US 6,991,876).

Independent claim 41 has been canceled.

Independent claim 1 describes an electrochemical cell comprising an aluminum anode, and an electrolyte solution positioned adjacent to the aluminum anode, a first fiberglass cloth positioned adjacent to the electrolyte solution and distal to the aluminum anode, a solid alkali metal peroxide cathode the cathode separated from the aluminum anode by an electrically insulating barrier comprising a woven metal electrode and a solid alkali peroxide, the woven metal electrode positioned adjacent to the first fiberglass cloth and separated from the solid alkali peroxide by a second fiberglass cloth, the aluminum anode and the cathode to participate in an electrochemical reaction to release energy from the cell upon the introduction of an aqueous activator.

Regarding independent claim 1, the Office states that Momyer teaches a metal-water electrochemical cell comprising a lithium anode, a silver current collector and lithium hydroxide electrolyte in which the anode and the cathode are immersed. The Office additionally states that Momyer further discloses an anode moderator consisting of soluble peroxide ions, including hydrogen peroxide, sodium peroxide, sodium super oxide, potassium peroxide and potassium super oxide. The Office states, with respect to claim 1, the Office states that Narang teaches an electrochemical cell comprising an aluminum anode, a solid alkali metal peroxide cathode comprising lithium peroxide (or sodium particulates) and a separator (an electrically insulating barrier).

To establish a *prima facie* case of obviousness, a reason, suggestion, or motivation from the prior art as a whole for the person of ordinary skill to have combined or modified the references must be provided. The Federal Circuit has established that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. Applicant contends that the Office has not provided any motivation to combine the teaching of Momyer and the teaching of Narang to arrive at the present invention. As such, the Office has not established a *prima facie* case of obviousness regarding amended independent claim 1.

Claims 1-3, 5-9, 11-15, 40 and 41 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Marsh et al. (US 5,445,905) in view of Momyer (US 4,001,043).

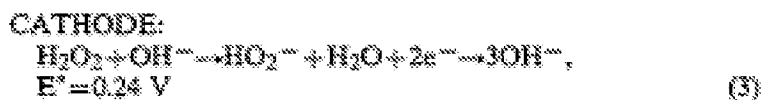
Independent claim 1 describes an electrochemical cell comprising an aluminum anode, and an electrolyte solution positioned adjacent to the aluminum anode, a first fiberglass cloth positioned adjacent to the electrolyte solution and distal to the aluminum anode, a solid alkali metal peroxide cathode the cathode separated from the aluminum anode by an electrically insulating barrier comprising a woven metal electrode and a solid alkali peroxide, the woven metal electrode positioned adjacent to the first fiberglass cloth and separated from the solid alkali peroxide by a second fiberglass cloth, the aluminum anode and the cathode to participate in an electrochemical reaction to release energy from the cell upon the introduction of an aqueous activator.

With respect to claims 1, 2, 40 and 41, the Office states that Marsh et al. teaches an electrochemical cell comprising an anode of aluminum (12), a catholyte of hydrogen peroxide (18) and a spacer (30) at Figure 1, column 2, lines 20-54 and example 1. The Office goes on to state that while Marsh et al. does not teach the use of an alkali metal peroxide cathode, Momyer teaches a metal-water electrochemical cell comprising a lithium anode, a silver cathode and lithium hydroxide electrolyte in which the anode and the cathode are immersed. The Office states that Momyer further discloses an anode moderator consisting of soluble peroxide ions, including hydrogen peroxide, sodium peroxide, sodium super oxide, lithium peroxide, potassium peroxide and potassium super oxide at claims 1 and 2, and column 4, lines 59-68. The Office concludes that hydrogen peroxide, lithium peroxide and potassium peroxide are considered functionally equivalent soluble peroxide ions and that therefore, it would have been obvious to one of ordinary skill in the art to substitute lithium peroxide (or potassium peroxide) for the hydrogen peroxide in the electrochemical cell disclosed by Marsh.

Applicant respectfully disagrees with the finding of the Office. The Office is suggesting that it would have been obvious to substitute lithium peroxide taught by Momyer for the hydrogen peroxide in the electrochemical cell disclosed by Marsh and that by doing, so the present invention would be considered obvious. To establish a *prima facie* case of obviousness, a reason, suggestion, or motivation from the prior art as a whole for the person of ordinary skill to have combined or modified the references must be provided. The Federal Circuit has established that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the

combination. Additionally, it is well established that the suggestion or teaching must come from the prior art and not from the invention itself. No motivation to combine these references has been identified in either of the references provided by the Office. The Applicant respectfully points out that the electrochemical reactions presented in the present invention and in the prior art references are extremely complex and involve not only the electrochemical reaction itself, but also the corrosion reaction, the solid dissolution and possible peroxide decomposition. As such, Applicant contends that it would not be obvious to one of ordinary skill in the art to substitute lithium peroxide (or potassium peroxide) for the hydrogen peroxide in the electrochemical cell disclosed by Marsh as suggested by the Office. Marsh describes a cell having an aluminum anode and a hydrogen peroxide catholyte. There is no suggestion by Marsh to substitute an alkali peroxide for the hydrogen peroxide as suggested by the Office.

In addition, both Marsh and Momyer teach away from substituting lithium peroxide for the hydrogen peroxide as suggested by the Office. Marsh teaches a cell having an aqueous hydrogen peroxide catholyte and an aluminum anode. Momyer teaches a cell having a lithium hydroxide catholyte with a hydrogen peroxide “moderator” and a lithium anode. As such, both Marsh and Momyer require the presence of hydroxide ions for the cathode reaction to be initiated. The requirement for hydroxide ions in the cathode reaction of Marsh is illustrated in Eq. 3:



The requirement for hydroxide ions (from lithium in the cell) in the cathode reaction of Momyer is evident in claim 1 of Momyer in which the claims elements include an aqueous lithium hydroxide electrolyte and an anode moderator. The anode moderator for improving the efficiency of the cell by reducing the anode’s sensitivity to change in the electrolyte molarity, flow rate and temperature, the anode moderator consisting essentially of soluble peroxide ions. As such, it is clear that the operation of the battery of Momyer requires both the aqueous lithium hydroxide and the soluble peroxide ions.

Accordingly, Marsh and Momyer teach away from substituting lithium peroxide for the hydrogen peroxide as suggested by the Office, because it is clear that the system of Marsh and the system of Momyer both require hydroxide ions for the operation of the cell. If the hydrogen peroxide of the Marsh system were replaced by lithium peroxide, the cell would no longer be operational because the hydroxide ions responsible for the initiation of the electrochemical reaction would no longer be available.

For the reasons cited above, Applicant believes that amended independent claim 1 is patentable over Marsh in view of Momyer and is believed to be in condition for allowance.

Claims 3-9, 12-14, 16-17, 39 and 40 are dependent upon claim 1, which has been shown to be allowable, and therefore are allowable as a matter of law.

If the Office is not fully persuaded as to the merits of Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (813) 925-8505 is requested.

Very respectfully,



**SIGNATURE OF PRACTITIONER**

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**CERTIFICATE OF ELECTRONIC TRANSMISSION**

**(37 C.F.R. 2.190 (b))**

I HEREBY CERTIFY that this correspondence is being electronically transmitted to the Patent and Trademark Office through EFS Web on July 29, 2008.

Date: July 29, 2008

/lauren reeves/

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Lauren Reeves